

ABSTRACT

A method of tracking a moving object in an image created by use of a synthetic aperture includes identifying a plurality of receive phase centers for an image collector, obtaining a synthetic aperture image using the plurality of receive phase centers, and 5 reading a signature of the moving object based on the synthetic aperture image, where the reading of the signature includes identifying, in the synthetic aperture image, as a function of image collection time, a presence of the moving object. The reading of the signature may also include identifying a changing position of the moving object, and may include associating a plurality of range difference values with respective ones of the 10 plurality of phase centers. A signature of a scatterer may be formed using only its associated ΔR -versus-time profile. The presence of a mover in the image may be determined by filtering the image to detect all or part of a signature, or by using one or more signatures to train a neural network to observe the mover directly.